



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/476,776	12/30/1999	TETSUHIRO SHIOMI	SON-1688	8293

7590 12/05/2006

RONALD P KANANEN ESQ
RADER FISHMAN & GRAUER
THE LION BUILDING
1233 20TH STREET NW SUITE 501
WASHINGTON, DC 20036

EXAMINER

CHU, KIM KWOK

ART UNIT PAPER NUMBER

2627

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/476,776

Applicant(s)

SHIOMI ET AL.

Examiner

Kim-Kwok CHU

Art Unit

2627

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Petition filed on 11/26/2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,5,8-10,13 and 15-20 is/are rejected.
- 7) ☒ Claim(s) 2,3,6,7,11,12 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Withdrawal of Final Rejection

1. The examiner withdraw the rejection of finally rejected claims in order to apply a new ground of rejection based on Applicant's petition filed on November 26, 2001.

A newly found reference of Kamiya et al. (U.S. Patent 5,001,690) is used as a prior art to rejected Claims 1, 4, 5, 8-10, 13 and 15-20.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

*A person shall be entitled to a patent unless --
(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.*

3. Claims 1, 4, 5, 8-10, 13 and 15-20 are rejected under 35 U.S.C. § 102(b) as being anticipated by Kamiya et al. (U.S. Patent 5,001,690).

4. Kamiya teaches a disk recording and/or reproducing apparatus having as all of the elements and means as recited in claims 1, 4 and 5. For example, Kamiya teaches the following:

(a) with respect to Claim 1, a spindle chassis (motor base) 11 for rotationally supporting a turntable 13 on which

an optical disk 10, to/from which information is recorded and/or reproduced, is placed (Fig. 1; spindle motor 11 is part of a spindle chassis/base); a pickup chassis (head base) 24 rotationally supported on the spindle chassis 11 (Fig. 13a), for movably supporting an optical pickup device 12 for writing and/or reading the information to/from the optical disk and being movable toward and away from the turntable (Figs. 13b and 13c); and a tilt mechanism 50, 59, 60 for adjusting tilt angle of the optical pickup device 12 with respect to the optical disk 10 by rotating the pickup chassis 24 with respect to the spindle chassis 11 (Fig. 1; tilt motor 50 is rotated and the optical pickup 12 is being tilted with respect to the stationary spindle chassis 11), the tilt mechanism 50, 59 comprising: a stepping motor 50 for rotating the pickup chassis 24 with respect to the spindle chassis 11 (Fig. 1; motor 50 is a stepping motor because it is pulse controlled); and a control circuit 46, 48 for driving the stepping motor 50 to set tilt angle at a predetermined neutral position without a tilt sensor (Figs. 1 and 5; column 4, lines 20-40).

(b) with respect to Claim 4, the predetermined neutral position is indicative of a middle position between a tilt minimum position and a tilt maximum position (Figs. 13a and 15e; column 5, lines 51-56).

(c) with respect to Claim 5, the predetermined neutral position is indicative of a position at which an optical disk having no warp is reproduced most preferably (Fig. 13a; inherent feature where a good disk has no tilt and therefore the received/detected signal can be used as a reference of disk tilting).

5. Claims 8-10 have limitations similar to those treated in the above rejection, and are met by the reference as discussed above.

6. Kamiya teaches a method of adjusting the tilt angle of an optical device tilt mechanism to a predetermined neutral position having as all of the steps as recited in claims 13 and 15-20. For example, Kamiya teaches the following:

(a) with respect to Claim 13, rotating a drive unit 50 in a first direction (forward until the tilt mechanism reaches a predetermined reference position; and rotating the drive unit in a second direction (reverse), opposite to the first direction, a predetermined number of rotations, thereby positioning the tilt mechanism to the predetermined neutral position (Fig. 1).

(b) with respect to Claim 15, the predetermined neutral position coincides with a position halfway between a

tilt mechanism minimum tilt position and a tilt mechanism maximum tilt position (Figs. 13a and 15e).

(c) with respect to Claim 16, synchronizing (initializing/starting) an electrically induced magnetic field phase of the drive unit 50 and a mechanical magnetic field phase of the drive unit 50, prior to rotating the drive unit 50 in the first direction (Figs. 151-15f).

(d) with respect to Claim 17, the synchronizing step comprises: electrically energizing a portion of the drive unit 50; and assembling the drive unit 50 to the tilt mechanism with the tilt mechanism positioned to the predetermined reference position (Fig. 13a; initializing and starting the tilting mechanism are a synchronizing step).

(e) with respect to Claim 18, retrieving the predetermined neutral position from a memory device, prior to rotating the drive unit in the second direction (Figs. 1 and 13a; CPU 46 has a memory for storing a neutral/reference tilt position such as RF signal intensity so the a forward rotation, a waiting or a reverse rotation operation can be generated).

(f) with respect to Claim 19, setting (initializing/starting) the predetermined neutral position, prior to rotating the drive unit 50 in the first direction (Fig. 1).

(g) with respect to Claim 20, the setting step comprises the steps of: positioning a reference optical disk proximate the optical device, the reference optical disk having no warp; generating a read signal by reading information recorded on the reference optical disk; setting the predetermined neutral position to coincide with a predetermined level of the read signal; and storing the predetermined neutral position in the memory device (Figs. 1 and 16; inherent steps of initializing/starting a disk read/write operations).

Allowable Subject Matter

7. Claims 2, 3, 6, 7, 11, 12 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is an Examiner's statement of reasons for the indication of allowable subject matter:

As in claim 2, the prior art of record fails to teach or fairly suggest a recording/reproducing apparatus having a control circuit with no tilt sensor input for driving a stepping motor to obtain a reference position by causing a loss of synchronism.

As in claim 11, the prior art of record fails to teach or fairly suggest a apparatus for adjusting the tilt angle of an optical pickup device wherein the tilt drive mechanism has a cam having a portion mechanically engaged with the stepper motor and a spiral surface mechanically engaged with the second chassis assembly.

As in claim 14, the prior art of record fails to teach or fairly suggest a method of adjusting the tilt angle of an optical pickup device wherein the predetermined reference position coincides with a loss of synchronism between an electrically induced magnetic field in the drive unit and a

mechanical magnetic field in the drive unit.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Shiomoi et al. (6,751,182) is pertinent because Shiomoi teaches optical disc drive having a tiltable optical pickup.

Sato et al. (6,417,104) is pertinent because Sato teaches a tilting mechanism which does not require a tilt sensor.

Son et al. (6,282,161) is pertinent because Son teaches a tilting mechanism which does not require a tilt sensor.

Mochizuki (5,502,698) is pertinent because Mochizuki teaches an optical disc drive having a tiltable optical pickup with a stepping motor.

10. Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kim CHU whose telephone number is (571) 272-7585 between 9:30 am to 6:00 pm, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrea Wellington, can be reached on (571) 272-4483.

The fax number for the organization where this application or proceeding is assigned is (571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished application is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9191 (toll free).

Kim-Kwok CHU

Examiner AU2627

November 27, 2006

(571) 272-7585


ANDREA WELLINGTON
SUPERVISORY PATENT EXAMINER